Building a Regional Health Information Technology Infrastructure

An adventure in health information technology in Santa Cruz County

What is wrong with this picture?

- U.S. Healthcare system:
  - Costs $2 trillion per year and growing
  - 20 percent of GDP by 2015
  - Medical error 6th leading cause of death in U.S. (approx. 100,000 fatalities per year)
  - 30 percent of physician orders are never documented anywhere
  - 30 billion health care transactions each year, only 5 percent electronic.

"**A hospital patient can expect on average to be subjected to more than one medication error each day**"

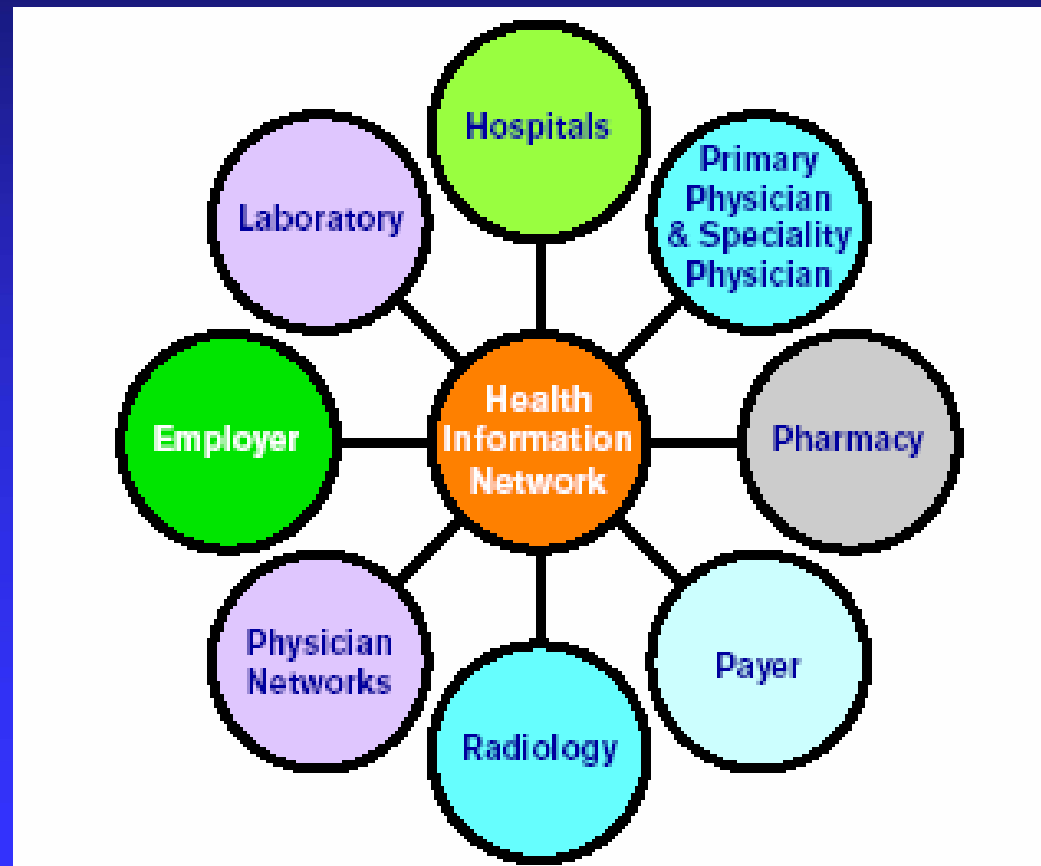**Source: Preventing Medication Errors – U.S. Institute of Medicine**

What about chronic disease?

- 7 of 10 deaths in U.S. each year attributable to chronic disease
- 75 percent of U.S. health care costs are for treatment of patients with chronic disease.
- One-third of diabetics in the U.S. don't know they have it.
- Five conditions – diabetes, heart disease, cancer, tobacco use, and obesity cost the U.S. economy nearly $1 trillion per year.
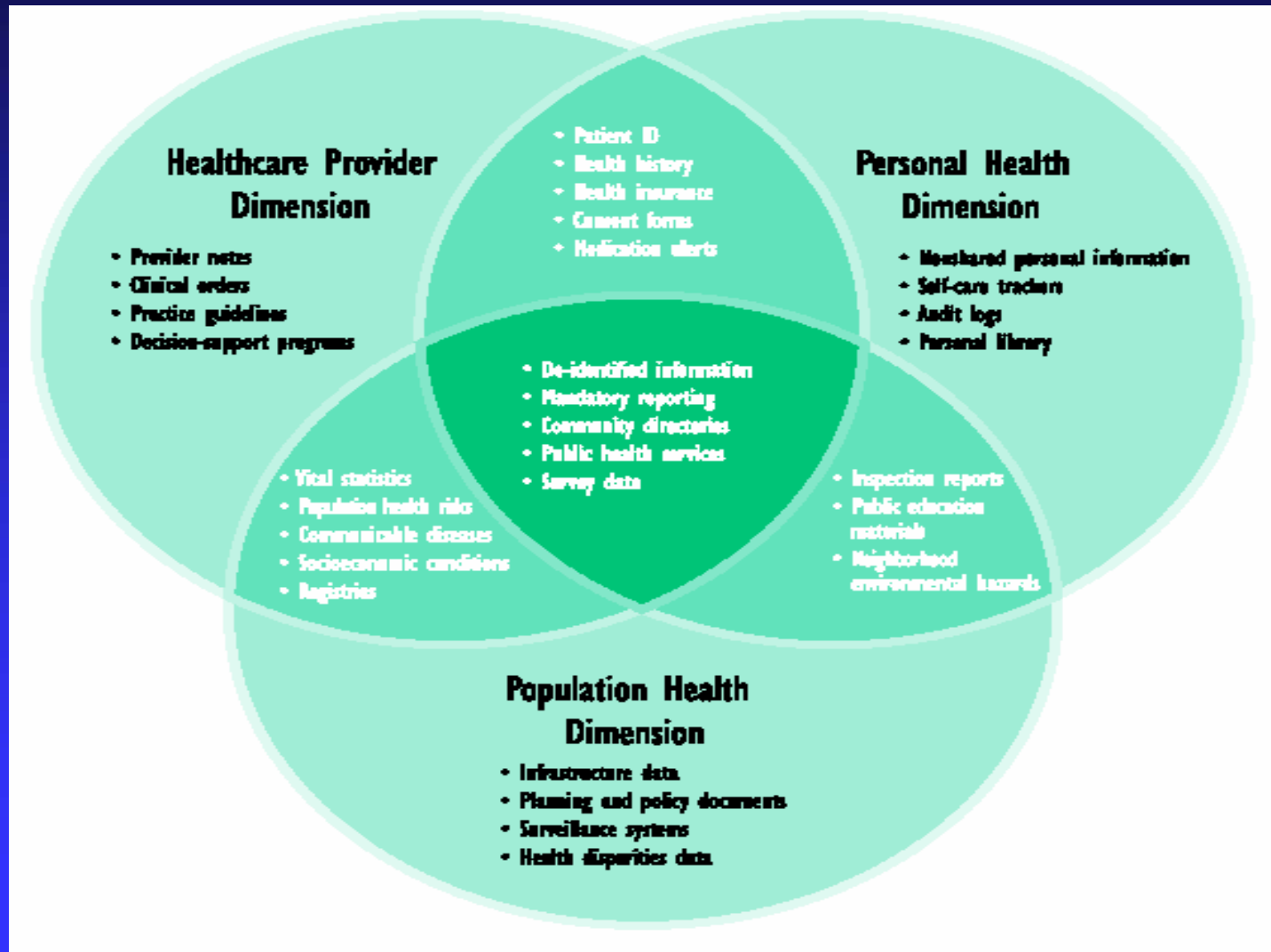
Can HIT make a difference?

- Health information technology is not a panacea
- Building a National Health Information Infrastructure (NHII) is a high national priority with little in the way of funding behind it
- Health information technology is very expensive, difficult to use and immature
- Healthcare providers are resistant to adopt
- It may be our only hope!

What is health information technology?
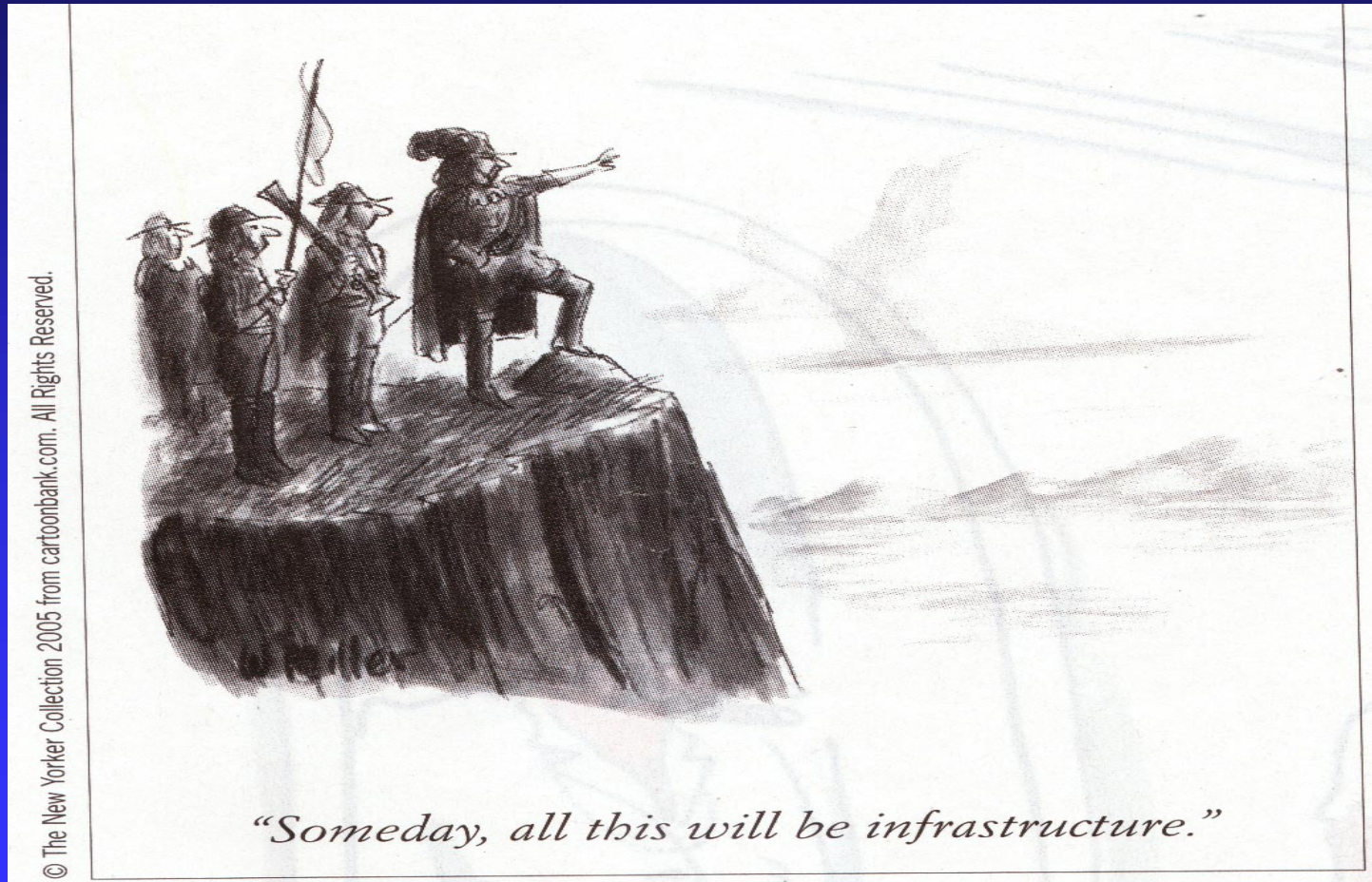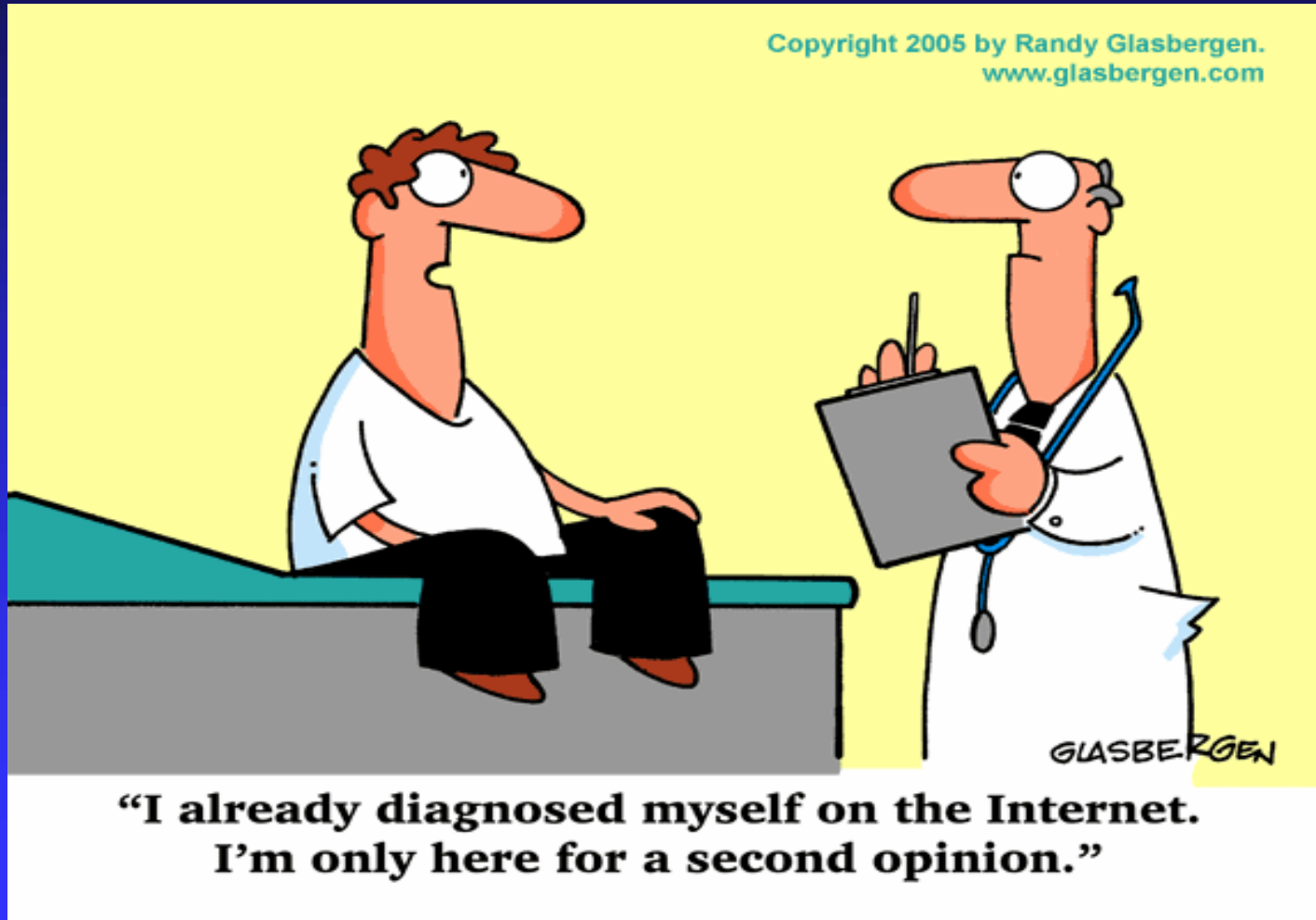
What it the NHII

The NHIII

- The broad goal of the NHIII is to **deliver information** to individuals – consumers, patients, and professionals – when and where they need it, so they can use this information **to make informed decisions** about health and healthcare.

  - NCVHS 2000

Where are we at today?

"Someday, all this will be infrastructure."

How the public views it?

Where are we really at?

- Most hospitals have not yet implemented computerized physician order entry systems
- Only 5 to 15 percent of physicians use EHRs
- Only 8 percent of Community Health Centers serving the underserved use EHRs.
- No CHCs in California using EHR as of yet
- Very few Counties have yet adopted use of EHR
- Due to costs and complexity we have very significant burdens and barriers to overcome.

What About Santa Cruz?

- Located on California's scenic Central Coast
- 2nd Smallest California County in land area
- Approximately 280,000 residents
- Mixed urban/rural population
- Served by three local in-patient hospitals
- Approximately 500 physicians

HIT Projects in Santa Cruz

- CAP/HCAP
- AHRQ
- RWJ
- NHII/Santa Cruz RHIO
- CNEA

CAP/HCAP Projects in Santa Cruz

- Healthcare Outreach
- Healthcare Planning
- Health Information Technology
  - Clinical Messaging
  - Clinical Practice Management
  - Electronic Health Records

AHRQ Projects in Santa Cruz

- Project Connect
- Community Chronic Care Network
  - Diabetes registry and point of care tool

RWJ Foundation Projects in Santa Cruz

- **InfoLinks**
  - Unique Patient Identification
  - Technical Standards
  - Architecture
  - Governance
- **Common Grounds**
  - Business process analysis
  - Childhood Obesity

Focus is on bringing Public Health to the table

Simplified Conceptual Health Information Exchange Model

Health Data Sources

Health Data

Data Users

Health Data Sources
- ❑ Patient/Family
- ❑ Primary Care Doctor
- ❑ Specialists
- ❑ Hospitals
- ❑ Labs
- ❑ Diagnostics Centers
- ❑ Insurance Plans/Benefit Mgrs./Payers
- ❑ Pharmacies

Health Data
- ❑ Recent Diagnosis/Procedures (ICD9/CPT)
- ❑ Problem Lists/Current Issues/ Chronic Conditions (Snomed?)
- ❑ Current Medications (NCPDP)
- ❑ Allergies (Allergy Codes)
- ❑ Recent Hospitalizations
  - Discharge Summary (HL7 ADT/ORU)
  - History & Physical (HL7 ADT/ORU? CDA?)
  - Operative Reports (HL7 ADT/ORU? CDA?)
  - Consultation Reports (HL7 ADT)
  - Discharge Instructions (paper)
- ❑ Radiology Reports
- ❑ Diagnostic Reports (EKG, Cardio-pulmonary, endoscopy)
- ❑ Recent Lab Results (HL7 ORU Callinx/Elincs?)
- ❑ Patient's Personal Health Record
  - Emergency Contacts
  - Primary Care Physician
  - OTCs/Vitamins/Etc.
  - Alternative Therapies

Data Users
- ❑ Emergency Responders
- ❑ Emergency Dept.
- ❑ Hospital
- ❑ Primary Care Doctor
- ❑ Specialist
- ❑ Patient
- ❑ Public Health Authority
  - Communicable Disease Outbreak
  - Bio-terrorism Event
  - Environmental Health Threat
  - Chronic Disease Mgt.

HIE Applicability to Public Health

- Public Health Data Systems
- Emergency Response
- Disease Surveillance/Reporting Systems
- Chronic Disease Registries/Repositories
- Immunization Registries

NHII & Santa Cruz

- Northrup Gruman Consortium
- Axolotl/Elysium Clinical messaging system prototype
- Demonstration project in January of 2007

CNEA & Santa Cruz

- Major California healthcare foundations working to develop models for EHR adoption by community health centers
- Three network prototypes currently developing business plans
  - Planned Parenthood
  - Community Council of San Diego
  - Santa Cruz Health Improvement Partnership

HIT Lessons Learned

- All health care is local
- Top down vs. bottom up
- Collaboration and trust is key
- Information silos may be detrimental to your health
- Critical health information exchange happens at the point of care

Lessons Learned

- Public Health needs to be at the table – perhaps at the head of the table
- For most health care providers – free is not cheap enough
- Build it and they will not come!
- It will always be harder and more expensive than you think
- There is no provable ROI

IT Issues to Ponder

- Why do we want to do this?
  - Improve healthcare safety
  - Improve healthcare quality
  - Improve healthcare efficiency
  - Improve access
- Best practices
- Standards
- Interoperability

Other issues of significance

- Governance
- Ownership of Data
- Privacy/Security of PHI
- Rules of exchange
- Who pays
- Who benefits

General HIT Resources:

- NHII - http://aspe.hhs.gov/sp/NHII/
- NCVHS - http://www.ncvhs.hhs.gov/
- HL7 - http://www.hl7.org/
- eHealth Initiative - http://www.ehealthinitiative.org/
- AHIMA –http://www.ahima.org/
- HIMSS - http://www.himss.org/ASP/index.asp
- CalRHIO - http://www.calrhio.org/

Public Health IT Resources

- **National Association of Public Health Information Technology www.naphit.org**
- PHIN - http://www.cdc.gov/phin/
- Public Health Data Standards Consoritum - http://www.phdsc.org/
- NEDSS - http://www.cdc.gov/nedss/

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